in which

A_1, A_2, A_3, A_4 are identical or different and are selected from the group which consists of

hydrogen, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted aralkyl, substituted and unsubstituted cycloalkyl, substituted and unsubstituted heterocyclic residues, metals of main group 1, 2 and 3 of the periodic system, and substituted and unsubstituted ammonium or ammonium compounds derived from ethylenediamine or amino acids,

X is absent or is selected from the group consisting of

alkylene, alkenylene and hydroxyalkylene,

R_1, R_2 are identical or different and are selected from the group consisting of

H, OH, $-NH_2$, substituted and unsubstituted acyl, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted cycloalkyl, substituted and unsubstituted aralkyl, substituted and unsubstituted heterocyclic residues, $-SR_3$, Cl and $-NR_3R_4$,

in which

R_3, R_4 are identical or different and are selected from the group consisting of

H, OH, substituted and unsubstituted acyl, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted aralkyl, substituted and unsubstituted cycloalkyl and substituted and unsubstituted heterocyclic residues,

their pharmaceutically compatible salts, esters thereof, salts of the esters and compounds, which upon administration form the compounds according to formula (I) or their salts or esters as metabolites or catabolites,

and a second active ingredient selected from the group consisting of

at least one autoantigen specific for the autoimmune disease to be treated, fragments of said autoantigens having the same immunological characteristics like said

autoantigens, and derivatives of said autoantigens having the same immunological characteristics like said autoantigens,

or a second active ingredient selected from the group consisting of

allergens specific for the allergy to be treated, fragments of said allergens having the same immunological characteristics like said allergens, and derivatives of said allergens having the same immunological characteristics like said allergens, and

an excipient.

16. The medicament of claim 15, wherein the bisphosphonic acid is selected from the group consisting of

R_1 is selected from the group consisting of

H, OH, $-NH_2$,

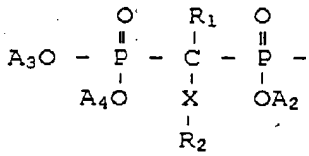
R_2 is selected from the group consisting of

H, OH, $-NH_2$, substituted and unsubstituted acyl, substituted and unsubstituted alkyl having 1 to 12 carbon atoms, substituted and unsubstituted aryl, substituted and unsubstituted cycloalkyl, substituted and unsubstituted aralkyl, substituted and unsubstituted heterocyclic residues, $-SR_3$, Cl and $-NR_3R_4$.

17. A medicament for treating an autoimmune disease or allergy, comprising

a first active ingredient selected from the group which consists of

bisphosphonic acids corresponding to general formula (I)



(I),

in which

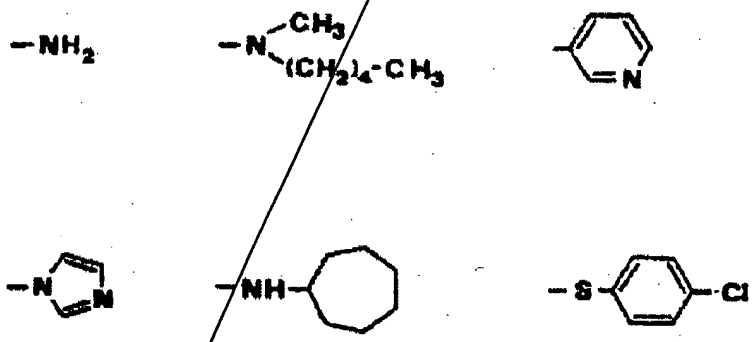
A_1, A_2, A_3, A_4 are identical or different and are selected from the group which consists of

hydrogen, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted aralkyl, substituted and unsubstituted cycloalkyl, substituted and unsubstituted heterocyclic residues, metals of main group 1, 2 and 3 of the periodic system, and substituted and unsubstituted ammonium or ammonium compounds derived from ethylenediamine or amino acids,

X is absent or is selected from the group consisting of $(CH_2)_{1-5}$, amidino,

R_1 is selected from the group consisting of H, OH,

R_2 is selected from the group consisting of



in which

R_3, R_4 are identical or different and are selected from the group consisting of

H, OH, substituted and unsubstituted acyl, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted aralkyl, substituted and unsubstituted cycloalkyl and substituted and unsubstituted heterocyclic residues,

their pharmaceutically compatible salts, esters thereof, salts of the esters and compounds, which upon administration form the compounds according to formula (I) or their salts or esters as metabolites or catabolites,

and a second active ingredient selected from the group consisting of

at least one autoantigen specific for the autoimmune disease to be treated, fragments of said autoantigens having the same immunological characteristics like said autoantigens, and derivatives of said autoantigens having the same immunological characteristics like said autoantigens,

or a second active ingredient selected from the group consisting of

allergens specific for the allergy to be treated, fragments of said allergens having the same immunological characteristics like said allergens, and derivatives of said allergens having the same immunological characteristics like said allergens; and

an excipient.

18. The medicament of claim 15, wherein the autoantigen is selected from the group consisting of nervous system tissue extracts, collagen, thyroglobulin, acetylcholine receptor protein, DNA, islet cell extracts, insulin, liver extracts, adrenal cortex extracts, skin extracts, muscle extracts, haemopoetic cell line extracts, heart extracts, eye lens proetins, S-antiens, gastric cell extracts, parietal cell extracts, intrinsic factor, and intestinal extracts.

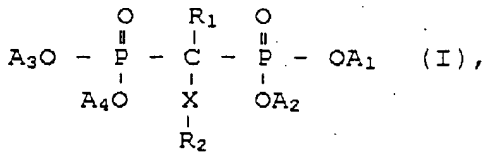
19. The medicament of claim 15, wherein the allergen is selected from the group consisting of pollen, dust, mites, foods, animal danders, and insect venom.

20. A medicament according to claim 15, wherein the medicament is present in a form selected from the group consisting of solid form, ointment, solution, and spray.

21. A medicament for treating an autoimmune disease or allergy, comprising

a first active ingredient selected from the group which consists of

bisphosphonic acids corresponding to general formula (I)



(I),

in which

A_1, A_2, A_3, A_4 are identical or different and are selected from the group which consists of

hydrogen, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted aralkyl, substituted and unsubstituted cycloalkyl, substituted and unsubstituted heterocyclic residues, metals of main group 1, 2 and 3 of the periodic system, and substituted and unsubstituted ammonium or ammonium compounds derived from ethylenediamine or amino acids,

X is absent or is selected from the group consisting of alkylene, alkenylene and hydroxyalkylene,

R_1, R_2 are identical or different and are selected from the group consisting of

H, OH, $-NH_2$, substituted and unsubstituted acyl, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted cycloalkyl, substituted and unsubstituted aralkyl, substituted and unsubstituted heterocyclic residues, $-SR_3$, Cl and $-NR_3R_4$,

in which

R_3, R_4 are identical or different and are selected from the group consisting of

H, OH, substituted and unsubstituted acyl, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted aralkyl, substituted and unsubstituted cycloalkyl and substituted and unsubstituted heterocyclic residues,

their pharmaceutically compatible salts, esters thereof, salts of the esters and compounds, which upon administration form the compounds according to formula (I) or their salts or esters as metabolites or catabolites,

and a second active ingredient selected from the group consisting of

at least one autoantigen specific for the autoimmune disease to be treated, fragments of said autoantigens having the same immunological characteristics like said autoantigens, and derivatives of said autoantigens having the same immunological characteristics like said autoantigens,

or a second active ingredient selected from the group consisting of

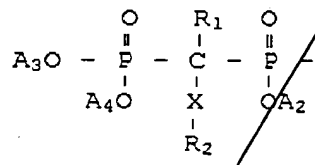
allergens specific for the allergy to be treated, fragments of said allergens having the same immunological characteristics like said allergens, and derivatives of said allergens having the same immunological characteristics like said allergens; and

an excipient.

22. A method for treating an autoimmune disease or allergy, comprising

administering a first active ingredient selected from the group which consists of

bisphosphonic acids corresponding to general formula (I)



(I),

in which

A_1, A_2, A_3, A_4 are identical or different and are selected from the group which consists of

hydrogen, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted aralkyl, substituted and unsubstituted cycloalkyl, substituted and unsubstituted heterocyclic residues, metals of main group 1, 2 and 3 of the periodic system, and substituted and unsubstituted

ammonium or ammonium compounds derived from ethylenediamine or amino acids,

X is absent or is selected from the group consisting of alkylene, alkenylene and hydroxyalkylene,

R_1, R_2 are identical or different and are selected from the group consisting of

H, OH, $-NH_2$, substituted and unsubstituted acyl, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted cycloalkyl, substituted and unsubstituted aralkyl, substituted and unsubstituted heterocyclic residues, $-SR_3$, Cl and $-NR_3R_4$,

in which

R_3, R_4 are identical or different and are selected from the group consisting of

H, OH, substituted and unsubstituted acyl, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted aralkyl, substituted and unsubstituted cycloalkyl and substituted and unsubstituted heterocyclic residues,

their pharmaceutically compatible salts, esters thereof, salts of the esters and compounds, which upon administration form the compounds according to formula (I) or their salts or esters as metabolites or catabolites,

and administering a second active ingredient selected from the group consisting of

at least one autoantigen specific for the autoimmune disease to be treated, fragments of said autoantigens having the same immunological characteristics like said autoantigens, and derivatives of said autoantigens having the same immunological characteristics like said autoantigens,

or a second active ingredient selected from the group consisting of

allergens specific for the allergy to be treated, fragments of said allergens having the same immunological characteristics like said allergens, and derivatives of

said allergens having the same immunological characteristics like said allergens; and

an excipient.

23. The method of claim 22, wherein the bisphosphonic acid is selected from the group consisting of

R_1 is selected from the group consisting of

H, OH, $-NH_2$,

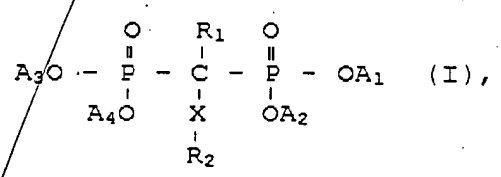
R_2 is selected from the group consisting of

H, OH, $-NH_2$, substituted and unsubstituted acyl, substituted and unsubstituted alkyl having 1 to 12 carbon atoms, substituted and unsubstituted aryl, substituted and unsubstituted cycloalkyl, substituted and unsubstituted aralkyl, substituted and unsubstituted heterocyclic residues, $-SR_3$, Cl and $-NR_3R_4$.

24. A method for treating an autoimmune disease or allergy, comprising

administering a first active ingredient selected from the group which consists of

bisphosphonic acids corresponding to general formula (I)



(I),

in which

A_1, A_2, A_3, A_4 are identical or different and are selected from the group which consists of

hydrogen, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted aralkyl, substituted and unsubstituted cycloalkyl, substituted and unsubstituted heterocyclic residues, metals of main group 1, 2 and 3 of the periodic system, and substituted and unsubstituted ammonium or ammonium compounds derived from ethylenediamine or amino acids,

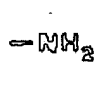
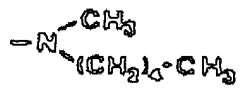
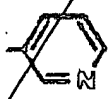
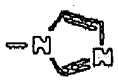
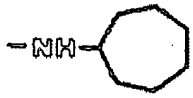
X is absent or is selected from the group consisting of

$(CH_2)_{1-5}$, amidino,

R_1 is selected from the group consisting of

H, OH,

R_2 is selected from the group consisting of


in which

R_3, R_4 are identical or different and are selected from the group consisting of

H, OH, substituted and unsubstituted acyl, substituted and unsubstituted alkyl, substituted and unsubstituted aryl, substituted and unsubstituted aralkyl, substituted and unsubstituted cycloalkyl and substituted and unsubstituted heterocyclic residues,

their pharmaceutically compatible salts, esters thereof, salts of the esters and compounds, which upon administration form the compounds according to formula (I) or their salts or esters as metabolites or catabolites,

and administering a second active ingredient selected from the group consisting of

at least one autoantigen specific for the autoimmune disease to be treated, fragments of said autoantigens having the same immunological characteristics like said autoantigens, and derivatives of said autoantigens having the same immunological characteristics like said autoantigens,

or a second active ingredient selected from the group consisting of

allergens specific for the allergy to be treated, fragments of said allergens having the same immunological characteristics like said allergens, and derivatives of said allergens having the same immunological characteristics like said allergens.

25. The method of claim 22, wherein the autoantigen is selected from the group consisting of nervous system tissue extracts, collagen, thyroglobulin, acetylcholine receptor protein, DNA, islet cell extracts, insulin, liver extracts, adrenal cortex extracts, skin extracts, muscle extracts, haemopoetic cell line extracts, heart extracts, eye lens proetins, S-antiens, gastric cell extracts, parietal cell extracts, intrinsic factor, and intestinal extracts.

26. The method of claim 22, wherein the allergen is selected from the group consisting of pollen, dust, mites, foods, animal danders, and insect venom.

27. The method according to claim 22, wherein the active ingredients are administered simultaneously.

28. The method according to claim 22, wherein the active ingredients are administered in succession.

29. The method according to claim 22, wherein extracts from the nervous system tissue are administered for the prophylaxis and treatment of multiple sclerosis.

30. The method according to claim 30, wherein the extracts from the nervous system tissue are myelin basic protein (MBP).

31. The method according to claim 22, wherein the autoantigen administered for the prophylaxis and treatment of rheumatoid arthritis is selected from the group consisting of type I, II, and III collagen.

32. The method according to claim 22, wherein thyroglobulin is administered for the prophylaxis and treatment of Hashimoto thyroiditis.

33. The method according to claim 22, wherein acetylcholine receptor protein is administered for the prophylaxis and treatment of Hashimoto myasthenia gravis.

34. The method according to claim 22, wherein DNA is administered for the prophylaxis and treatment of lupus erythematosus.

35. The method according to claim 22, wherein the autoantigen administered for the prophylaxis and treatment of diabetes mellitus is selected from the group consisting of islet cell extracts, human insulin.

36. The method according to claim 22, wherein liver extracts are administered for the prophylaxis and treatment of primary biliary cirrhosis.

37. The method according to claim 22, wherein liver cell extracts are administered for the prophylaxis and treatment of active chronic hepatitis.

38. The method according to claim 22, wherein adrenal cortex extracts are used for the prophylaxis and treatment of a disease selected from the group consisting of adrenalitis and Addison's disease.

39. The method according to claim 22, wherein the autoantigen administered for the prophylaxis and treatment of diabetes mellitus is selected from the group consisting of islet cell extracts, human insulin.

40. The method according to claim 22, wherein the autoantigen administered for the prophylaxis and treatment of polymyositis is selected from the group consisting of skin extracts, muscle extracts.

41. The method according to claim 22, wherein the autoantigen administered for the prophylaxis and treatment of dermatomyositis is selected from the group consisting of muscle and skin extracts.

42. The method according to claim 22, wherein haemopoetic cell line extracts are administered for the prophylaxis and treatment of autoimmune haemolytic anaemia.

43. The method according to claim 22, wherein heart extracts are administered for the prophylaxis and treatment of a disease selected from the group consisting of myocarditis and myopericarditis.

44. The method according to claim 22, wherein the autoantigen administered for the prophylaxis and treatment of scleroderma is selected from the group consisting of skin extracts, skin cell extracts.

45. The method according to claim 22, wherein the autoantigen administered for the prophylaxis and treatment of uveitis (phacouveitis, sympathetic ophthalmia) is selected from the group consisting of eye lens proteins, S-antigens, S-antigen mixtures.

46. The method according to claim 22, wherein skin extracts are administered for the prophylaxis and treatment of a disease selected from the group consisting of pemphigus vulgaris and pemphigoid.

47. The method according to claim 22, wherein the autoantigen administered for the prophylaxis and treatment of pernicious anaemia is selected from the group consisting of gastric cell extracts, parietal cell extracts, intrinsic factor.

48. The method according to claim 22, wherein gastric cell extracts are administered for the prophylaxis and treatment of autoimmune atrophic gastritis.